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ABSTRACT

Drawn from several comprehensive bibliographies and computer searches of volumes by speakers at the Conference on Thinking, this brief bibliography presents resources for researchers and practitioners interested in the areas of cognitive and critical thinking skills. The materials are divided into the following topic areas: (1) general, (2) problem solving, (3) creativity, (4) philosophy of mind and thinking, (5) learning to learn, (6) pictorial/oral/written communication, (7) artificial intelligence and computers, (8) brain functioning, (9) intelligence, (10) reasoning/critical thinking, (11) cognitive development, and (12) understanding. (HTH)

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BIBLIOGRAPHY FOR CONFERENCE ON THINKING

CAMBRIDGE, MASSACHUSETTS

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The scope of research and practitioner interests represented at the 1984 Conference on Thinking spans both theory and applications, as well as a broad range of widely divergent topics. This bibliography has far more modest aims. It attempts to serve the very real needs of the curriculum director and the teachers and administrators who look at extensive research bibliographies and say "Where do I begin?"

The thinking agenda represented at this conference has been divided into eleven concrete, though somewhat arbitrary themes. Within each category of the bibliography experts have been queried about the essential volumes. Several comprehensive bibliographies have been culled for pertinent materials of interest to the practitioner. The results of online searching for books written by many of the conference speakers during the past decade have been added. Finally, the categories were examined by several members of the conference committee for flagrant omissions, realizing that the intent was introductory, to lead the user into the subject. The inclusion of books about demonstration projects is representive of many worthwhile "thinking" programs in educational institutions. Their inclusion does not imply specific endorsement.

Beyond the books listed lies a vast world of research, an extensive body of information in the periodical literature, and an array of publications from demonstration programs.

Information from those who read and use the bibliography will be part of an ongoing process for update and revision.

Inabeth Miller
Librarian to the Faculty
of Education

I. GENERAL

The study of thinking ranges over topics such as problem solving, creativity, decision making, intelligence and more, as the categories of this bibliography demonstrate. Although the labels employed here are somewhat vague and overlapping, they do provide serviceable, if rough, partition of a complex field. Among the many worthwhile readings in the area are a few that are hard to classify because they cut across several of the particular categories and provide a broader picture.

Adams, M.J., et al.
Teacher's Manual. Prepared for Project Intelligence: The Development of Procedures to Enhance Thinking Skills. 1982.

Campbell, David, P.
Take the Road to Creativity and Get Off Your Dead End. Niles, IL: Argus Communications, 1977.

de Bono, Edward.
COrt Thinking. Blandford, Dorset, England: Direct Education Services Limited, 1973, 1974, 1975.

Hayes, J. R.
The Complete Problem Solver. Philadelphia: Franklin Institute Press, 1981.

LeBoeuf, Michael.
Imagineering: How to Profit From Your Creative Powers. New York: McGraw-Hill, 1982.

Lochhead, Jack, and Clement, John (editors).
Cognitive Process Instruction: Research on Thinking Skills. Philadelphia: Franklin Institute Press, 1979.

Maxwell, W. (editor)
Thinking, the Expanding Frontier. Philadelphia: Franklin Institute Press, 1983.

Machado, Luis Alberto.
La Revolucion de Inteligencia. Barcelona, Spain: Seixbarral, 1975.

Machado, Luis Alberto.
The Right to be Intelligent. New York: Pergamon Press, 1980.

Nickerson, R., Perkins, D. and Smith, Edward.
Teaching Thinking. Erlbaum, in press.

Segal, J., Chipman, S. and Glazer, R.
Thinking and Learning Skills. 2 vols. Hillsdale, NJ: Erlbaum Associates, in press.

Von Oech, Roger.
A Whack on the Side of the Head: How to Unlock Your Mind For Innovation. New York: Warner Books, 1983.

II. PROBLEM SOLVING

In a broad sense, nearly any task people face, from the most mundane to the most creative, can be called a problem. However, in the worlds of psychology and education, problem solving tends by custom toward a narrower meaning, referring mainly to the solving of academic problems in mathematics, physics, and other disciplines, to the solving of puzzle-like problems and riddles, and to the solving of "how to" problems that arise in everyday contexts, such as how to foster better employer-employee relations.

Ackoff, Russel L.
The Art of Problem Solving. New York: John Wiley and Sons, 1978.

Covington, M.V., Crutchfield, R.S., Davies, L., and Olton, R.M.
The Productive Thinking Program: A Course in Learning to Think. Columbus, OH: Merrill, 1974.

Forman, George E. (editor).
Action and Thought: From Sensorimotor Schemes to Symbolic Operations. New York: Academic Press, 1982.

Lochhead, Jack, and Whimbey, Arthur.
Developing Mathematical Skills: Computation, Problem Solving, and Basics for Algebra. New York: McGraw-Hill, 1981.

Lochhead, Jack, and Whimbey, Arthur.
Instructor's Guide for Problem Solving and Comprehension: A Short Course in Analytical Reasoning. Philadelphia: Franklin Institute Press, 1982.

Lochhead, Jack, and Whimbey, Arthur.
Problem Solving and Comprehension. Philadelphia: Franklin Institute Press, 1982.

Meichenbaum, D.
Cognitive Behavior Modification. New York: Plenum Press, 1977.

Newell, A., and Simon, H.A.
Human Problem Solving. Englewood Cliffs, NJ: Prentice Hall, 1972.

Olds, H.F., Jr., et al.
Motivating Today's Students. Palo Alto, CA: Learning Handbooks, 1974.

Olds, H.F., Jr., et al.
People and Computers: Who Teaches Whom? Newton, MA: Education Development Center, 1980.

Polya, G.
How to Solve It: A New Aspect of Mathematical Method. 2nd edition. Princeton, NJ: Princeton University Press, 1973.

Polya, G.
Mathematics and Plausible Reasoning. 2 vols. Princeton, NJ: Princeton University Press, 1969.

Rubenstein, M.F.
Patterns of Problem Solving. Englewood Cliffs, NJ: Prentice-Hall, 1975.

Wales, Charles E., et al.
Guided Engineering Design: An Introduction to Engineering Calculations. 2nd edition. St. Paul: West Publishing Co., 1981.

Wickelgren, Wayne A.
How to Solve Problems. San Francisco: W.H. Freeman, 1974.

III. CREATIVITY

Creativity refers to the individual trait of producing appropriate and original ideas or other products in any field. Appropriateness without originality is mundane, and originality without some kind of appropriateness is simply bizarre. The word creativity does not imply that creativity is a single ability; it may be as much a matter of personality as ability and may involve a mix of diverse abilities, perhaps a different mix in different cases. The literature on creativity includes a variety of theoretical positions and numerous books oriented toward self-help and instruction. Some of each are represented on our list.

Adams, James L.
Conceptual Blockbusting: A Guide to Better Ideas. 2nd edition. New York: W.W. Norton, 1980.

Adams, M.J., et al.
Teacher's Manual, Prepared for Project Intelligence: The Development of Procedures to Enhance Thinking Skills. 1982.

Amabile, Theresa.
The Social Psychology of Creativity. New York: Springer-Verlag, 1983.

de Bono, Edward.
Lateral Thinking: Creativity Step by Step. New York: Harper & Row, 1970.

Getzels, Jacob W., and Csikszentmihalyi, Mihaly.
The Creative Vision: A Longitudinal Study of Problem Finding In Art. New York: Wiley, 1976.

Howard, V.A.
Artistry, the Work of Artists. Indianapolis: Hackett, 1982.

Koberg, Don.
The All New Universal Traveler: A Soft-Systems Guide to Creativity, Problem-Solving, and the Process of Reaching Goals. Los Altos, CA: W. Kaufmann, 1976.

Koestler, Arthur.
The Act of Creation. London: Hutchinson, 1964; New York: Macmillin, 1964

Mansfield, R.S., and Busse, T.V.
The Psychology of Creativity and Discovery. Chicago: Nelson-Hall, 1981.

Perkins, D.N.
The Mind's Best Work. Cambridge, MA: Harvard University Press, 1981.

Rothenberg, A., and Hausman, C.R. (editors).
The Creativity Question. Durham, NC: Duke University Press, 1976.

Rothenberg, A.
The Emerging Goddess: the Creative Process in Art, Science and Other Fields. Chicago: University of Chicago Press, 1982.

Simonton, Dean Keith.
Genius, Creativity and Leadership: Historiometric Inquiries. Cambridge, MA: Harvard University Press, 1984.

IV. PHILOSOPHY OF MIND AND THINKING

Besides founding the critical thinking movement, philosophers have addressed the nature of mind and the nature of thinking directly, sometimes with an eye toward how students can be introduced to a philosophical perspective and style of inquiry.

Block, Ned.
Readings in Philosophy of Psychology. Vol. 1. Cambridge, MA: Harvard University Press, 1980.

Lipman, Matthew, Sharp, A.M., and Oscanyan, Frederick, S.
Philosophy in the Classroom. Upper Montclair, NJ: Montclair State College, 1977.

Matthews, Gareth B.
Philosophy and the Young Child. Cambridge, MA: Harvard University Press, 1980.

Scheffler, Israel.
Conditions of Knowledge. Glenview, IL: Scott, Foresman and Co. 1965.

V. LEARNING TO LEARN

Although learning to learn may sound odd at first, it is a commonplace part of human development. For instance, most high school students have acquired strategies for memorizing that are unfamiliar to the second grader, simple points such as the value of repetition or visualization or organized time. Although some learning to learn happens spontaneously, much more might occur if education broadened its focus to address the learning process as well as content.

Higbee, Kenneth L.
Your Memory: How It Works and How To Improve It. Englewood Cliffs, NJ: Prentice-Hall, 1977.

Lochhead, Jack, and Whimby, Arthur.
Beyond Problem Solving and Comprehension: An Exploration of Quantitative Reasoning. Philadelphia, PA: Franklin Institute Press, 1984.

O'Neil, H.F., and Spielberger, C.D. (editors).
Cognitive and Affective Learning Strategies. New York: Academic Press. 1979.

O'Neil, H.F. (editor).
Learning Strategies. New York: Academic Press, 1978.

VI. PICTORIAL / ORAL / WRITTEN COMMUNICATION

Thinking is not just a matter of how we think but what tools we think with. The written or spoken word, pictures, and other symbol systems are instruments that often help us to formulate, edit, and preserve lines of thought. The way that various symbol systems aid and foster thinking has been a theme explored by a number of contemporary thinkers.

Arnheim, Rudolf.
Visual Thinking. Berkeley: University of California Press, 1976.

Bowen, Eleanor.
Return to Laughter. Garden City, NY: Natural History Press, 1964.

Chukovsky, Kornei.
From Two To Five. Berkeley: University of California Press, 1963.

Gardner, Howard, and Kelly, Hope (editors).
Viewing Children Through Television. San Francisco: Jossey-Bass, 1981.

Greenfield, Patricia.
Mind and Media: The Effects of Television, Video Games and Computers. Cambridge, MA: Harvard University Press, 1984.

Luria, A.R.
Cognitive Development: Its Cultural and Social Foundations. Cambridge, MA: Harvard University Press, 1976.

Moffett, James.
Teaching the Universe of Discourse. Boston: Houghton Mifflin, 1983.

Olsen, David R. (editor).
Media and Symbols: The Forms of Expression, Communication and Education. Chicago: University of Chicago Press, 1976.

Paley, William.
Wally's Stories. Cambridge, MA: Harvard University Press, 1981.

Paley, William.
White Teacher. Cambridge, MA: Harvard University Press, 1979.

Perkins, David, and Leondar, Barbara (editors).
The Arts and Cognition. Baltimore: Johns Hopkins University Press, 1977.

Rose, Mike.
Writer's Block: The Cognitive Dimension. Carbondale: Southern Illinois University Press, 1984.

Salomon, Gavriel.
Communication and Education: Social and Psychological Interactions. Beverly Hills, CA: Sage Publications, 1981.

Salomon, Gavriel.
Interaction of Media, Cognition and Learning. San Francisco: Jossey-Bass, 1979.

Salomon, Gavriel.
The Language of Media and the Cultivation of Mental Skills: A Report on Three Years of Research Submitted to the Spencer Foundation. Jerusalem: Hebrew University, 1977.

Salomon, Gavriel.
Sesame Street in Israel: Its Instructional and Psychological Effects on Children. Jerusalem: Hebrew University of Jerusalem, 1974.

VII. ARTIFICIAL INTELLIGENCE AND COMPUTERS

Artificial intelligence means the use of computers to perform tasks that, in a human being, would be considered intelligent. Among the tasks that have received special attention are playing chess, identifying objects in a scene from a visual input, and conducting a conversation in ordinary language via keyboard and monitor. Much of the work in artificial intelligence informs our understanding of how people think. More generally, artificial intelligence and related disciplines have led to some work on how computers can help people to learn to think better.

Boden, Margaret A.
Artificial Intelligence and Natural Man. New York: Basic Books, 1977.

Boden, Margaret A.
Minds and Mechanisms: Philosophical Psychology and Computational Models. Brighton, Sussex, England: Harvester Press, 1981.

Dreyfus, H.L.
What Computers Can't Do. New York: Harper & Row, 1979.

Goldenberg, E.P.
Social Technology for Special Children. Baltimore: University Park Press, 1979.

McCorduck, P.
Machines Who Think. Van Nuys, CA: Freeman Press, 1979.

Papert, Seymour.
Mindstorms: Children, Computers and Powerful Ideas. New York: Basic Books, 1982.

Turkle, Sherry.
The Second Self: Computers and the Human Spirit. NY: Simon and Schuster, 1984.

Weizenbaum, J.
Computer Power and Human Reason: From Judgement to Calculation. Van Nuys, CA: Freeman Press, 1976.

Winston, Patrick.
Artificial Intelligence. 2nd edition. Reading MA: Addison-Wesley, 1984.

Winston, P., and Prendergast, Karen.
The AI Business: Commercial Uses of Artificial Intelligence. Cambridge, MA: MIT Press, 1984.

VIII. BRAIN FUNCTIONING

As conscious beings, we cannot help but find it odd that our thinking and learning occurs through the actions of a biochemical machine. Few today would doubt that much, but so many questions remain: what parts of the brain do which jobs, or is the work distributed throughout? Is there any substance to the popular left-brain right-brain theme? Can mental capacities and incapacities be traced to anatomical or chemical differences in the brain? Does the development of the brain tell us anything about what can or should be taugnt when?

Gardner, Howard.
The Shattered Mind: The Person After Brain Damage. New York: Vintage Books, 1976.

Heilman, K. and Valenstein, E. (editors).
Clinical Neuropsychology. New York: Oxford University Press, 1979.

IX. INTELLIGENCE

In everyday terms, intelligence refers to a person's ability to solve problems, plan well, learn well, and deal with situations flexibly and appropriately. In other words, intelligence means general mental competence. Psychologists have long sought a simple model of what is most essential to intelligence. Is it really one trait or the product of several, influenced primarily by inheritance or learning, subject to change by instruction or not? Interpretations are so diverse that while some would say you can improve thinking without improving intelligence, others would say that to improve thinking is to improve intelligence.

Baron, J.
Rationality and Intelligence. New York: Cambridge University Press, in press.

Block, N.J., and Dworkin, G. (editors).
The I.Q. Controversy. New York: Pantheon, 1974.

Detterman, D. and Sternberg, R.
How and How Much Can Intelligence Be Increased?. Norwood, NJ: Ablex, 1974.

Feuerstein, R.
The Dynamic Assessment of Retarded Performers. Baltimore: University Park Press, 1979.

Feuerstein, R.
Instrumental Enrichment: An Intervention Program Modifiability. Baltimore: University Park Press, 1979.

Gardner, Howard.
Frames of Mind: The Theory of Multiple Intelligences. New York: Basic Books, 1983.

Guilford, J.P., and Hoeptner, R.
The Analysis of Intelligence. New York: McGraw-Hill, 1971.

Herrnstein, Richard J.
I.Q. in the Meritocracy. London: Allen Lane, 1973.

Herrnstein, Richard J. et al. (editors).
Matching and Maximizing Accounts. Cambridge, MA: Ballinger, 1982.

Herrnstein, Richard J., and Brown, R.
Psychology. Boston: Little, Brown, 1975.

Jacobs, Paul I., and Meirovitz, M.
Brain Muscle Builders: Games to Increase Your Natural Intelligence. Englewood Cliffs, NJ: Prentice-Hall, 1983

Jacobs, Paul I., and Knapp, Joan E.
Setting Standards for Assessing Experiential Learning. Columbia, MD: Council for the Advancement of Experiential Learning, 1981.

Jacobs, Paul I.
Up the I.Q.. New York: Wyden Books: trade distribution by Simon Schuster, 1977.

Jensen, Arthur.
Bias in Mental Testing. Riverside, NJ: Free Press, 1982.

Jensen, Arthur.
Genetics in Education. New York: Harper and Row, 1975.

Jensen, Arthur.
Straight Talk About Mental Tests. Riverside, NJ: Free Press, 1982.

Meeker, Mary.
The Structure of Intellect: Its Interpretation and Uses. Columbus, OH: Charles E. Merrill, 1969.

Sternberg, Robert (editor).
Handbook of Human Intelligence. NY: Cambridge University Press, 1982.

Sternberg, R.J.
Beyond I.Q.: A Triarchic Theory of Human Intelligence. New York: Cambridge University Press, in press.

Whimbey, A.
Intelligence Can Be Taught. New York: E.P. Dutton, 1975.

X. REASONING / CRITICAL THINKING

While the core discipline for most of the other categories in this bibliography is psychology, the core discipline for this one is philosophy. That is, the majority of the ideas and writings come from philosophy and philosopher-educators. Reasoning and critical thinking focus on the assessment of beliefs and products of thought. Is it clear? Is it sound? Has it been proved? The "critical" of critical thinking does not imply a negative posture but an objective, analytical and evaluative one, a posture that most would agree education should foster.

Adams, Marilyn Jager, and Collins, Allan.
A Schema-Theoratic View of Reading. Urbana: University of Illinois at Urbana-Champaign, 1977.

Adams, Marilyn Jager, and Bruce, Bertram.
Background Knowledge and Reading Comprehension. Cambridge, MA: Bolt, Beranek, and Newman, 1980.

Adams, Marilyn Jager.
Failure to Comprehend and Levels of Processing in Reading. Urbana: University of Illinois at Urbana-Champaign, 1977.

Brandt, Ronald S. (editor).
Applied Strategies for Curriculum Evaluation. Alexandria, VA: Association for Supervision and Curriculum Development, 1981.

Halpern, Diane.
Thought and Knowledge: An Introduction to Critical Thinking. Hillsdale, NJ: Erlbaum Associates, 1984.

Kahneman, D., Slovic, P., Tversky, A. (editors).
Judgement Under Uncertainty: Heuristics and Biases. New York: Cambridge University Press, 1982.

Nisbett, R. and Ross, L.
Human Inference: Strategies and Shortcomings of Social Judgement. Englewood Cliffs, NJ: Prentice-Hall, 1980.

Olela, Henry, and Williams, Shirley (editors).
Philosophical Inquiry: An Investigation of Basic Philosophical Presuppositions - Student's Manual. Washington, DC: Institute for Services to Education, 1974.

Toutmin, S.E., et al.
An Introduction to Reasoning. New York: MacMillan, 1979.

XI. COGNITIVE DEVELOPMENT

Cognitive development concerns long-term human intellectual growth and learning: what happens over the years in consequence of physical maturation, experience and formal learning? A number of themes characterize the field, among them whether development is stage-like or continuous, whether certain concepts can't be learned until learners have attained some general level of intellectual readiness, whether intellectual development depends on a few core operations or a multitude, whether direct instruction or a nourishing environment best fosters development across a broad front.

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Jean Piaget. New York: Viking Press, 1980.

Flavell, J.
Cognitive Development. Englewood Cliffs, NJ: Prentice Hall, 1977.

Gardner, Howard.
Developmental Psychology: An Introduction. Boston: Little Brown, 1982.

Kohlberg, Lawrence, et al.
Assessing Moral Stages: A Manual. Cambridge, MA: Harvard University, 1978.

Kohlberg, Lawrence.
The Meaning and Measurement of Moral Development. Worcester, MA: Clark University Press, 1981.

Kohlberg, Lawrence, et al.
Moral Stages: A Current Formulation and a Response to Critics. New York: Karger, 1983.

Loevinger, J.
Ego Development: Conceptions and Theories. San Francisco: Jossey-Bass, 1976.

Perry, W.G., Jr.
Forms of Intellectual and Ethical Development in the College Years. New York: Holt, Rinehart and Winston, 1976.

Sternberg, R. (editor).
Mechanisms of Cognitive Development. San Francisco: Freeman, 1984.

XII. UNDERSTANDING

We take the word "understand" for granted, but it's far from obvious just what happens when we understand or fail to understand something. Besides intrinsic interest, the question has practical import, for all too commonly students learn the facts but do not understand the point made or the problem posed. Some insight comes from the contemporary efforts of psychologists, philosophers and others to examine what kinds of mental representations consitute an understanding of something and how the mind creates those representations.

Easley, Jack and Brandau, Linda.
Understanding the Realities of Problem Solving in Elementary School. Columbus OH: Ohio State University, College of Education, 1979.

Gentner, Dedre, Stevens, Albert L. (editors).
Mental Models. Hillsdale, NJ: Erlbaum Associates, 1983.

Johnson-Laird, P. N.
Mental Models: Towards a Cognitive Science of Language, Inference and Consciousness. Cambridge, MA: Harvard University Press, 1983.

McNeil, J. D.
Reading Comprehension: New Directions for Classroom Practice. Glenview, IL: Scott Foresman and Co., 1984.

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Compiled by Anthony Cipollone
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